CAL POLY
College of Engineering

ENGINEERING Advantage

College of Engineering • Cal Poly San Luis Obispo • Fall 2012

Mustangs to Mars

Cal Poly Engineering alums play key role with Martian rover

See Page 12

A TALENTED ALUMNI UNIVERSE: For at least 30 Cal Poly Engineering alums at NASA's Jet Propulsion Laboratory, their Learn by Doing education put them in perfect alignment with the Dare to Do Mighty Things culture that was the byword of the Mars mission. Their sphere of "doing" ranged from early testing of hardware and software to driving the $2.5 billion robot on Mars. See article on Page 12.

Cal Poly Robotics and Automation Lab Prepares Students for New World of Manufacturing

Lab sponsored by Gene Haas Foundation

A new robotics and automation lab in Cal Poly's Industrial and Manufacturing Engineering Department will help students gain hands-on exposure to cutting-edge systems and technology.

The Gene Haas Laboratory for Robotics and Automation is the result of a $50,000 gift from the Gene Haas Foundation. The lab provides new hardware, software and precision tools for Cal Poly's already strong manufacturing engineering program. That gift also inspired an array of state-of-the-art technology donations from other industry leaders including Yaskawa America, Rockwell Automation, Keyence and Trust Automation.

"This collaborative giving from our industry partners has helped produce an outstanding automation and robotics lab," said Jose Macedo, department chair. "The Haas Lab creates another exciting, hands-on environment for students to fully engage in automated systems and technologies that are at the core of virtually all advanced manufacturing industries."

Cal Poly Engineering Dean Debra Larson, right, and Kurt Zierhut, vice president of electrical engineering at Haas, unveil the plaque in the Gene Haas Lab of Robotics and Automation Lab.

"The future is here," said College of Engineering Dean **Debra Larson**. "Labs like this develop the high-talent workforce needed for advanced manufacturing which is so vital to national prosperity – it's a great investment."

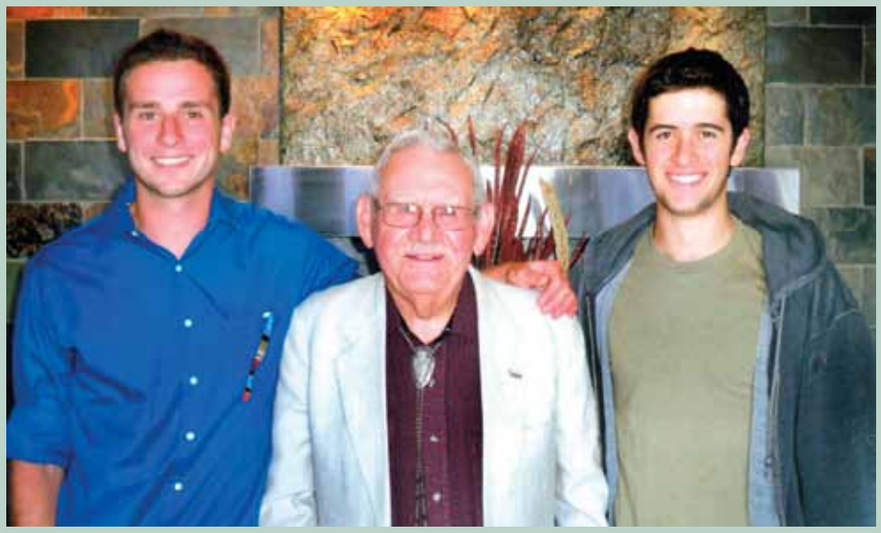
"We are delighted to see the entrepreneurial and multidisciplinary opportunities here," said Bill Tandrow, vice president of mechanical engineering for Haas. "We like to see a skilled level of thinking, and Cal Poly is quite successful in fostering those aptitudes."

"This lab provides a core building block for a lot of things," said John Payne, vice president of motion for Yaskawa, a leading manufacturer of motion control and robotics automation systems. "It's what we, as a company, want to see happening.

"Motion control is at the heart of many companies, and what students will find in this lab, they will see in the most sophisticated equipment in the world. Students will be able to learn the fundamentals as well as advanced operations," said Payne.

"Our country has a strong legacy of going from raw materials to finished goods," noted Tandrow. "Through our investment in this lab, that legacy – with 21st century tools and technology – will be put in the hands of those who will be changing the world." ■

Jack and Alice Spalding Mechanical Engineering Scholarship



Last June, donor Jack Spaulding (B.S., Mechanical Engineering, 1949) joined student scholarship recipients John Kearns (B.S., Mechanical Engineering, 2012) (left) and mechanical engineering senior Franklin Wiggins at a scholarship luncheon. Spaulding and his wife Alice established the Jack and Alice Spaulding Mechanical Engineering Scholarship in 1959. Kearns was awarded the Spaulding Scholarship, while Wiggins received the Cordner Gibson and Ace Smith Scholarship.

Mechanical Engineering alum Thomas Fraser Gives Back to Cal Poly

On June 9, 1973, **Thomas Fraser** graduated from Cal Poly with a degree in mechanical engineering. Two days later, he went to work for Vetco Offshore, a company that provides equipment and services for oil drilling and production.

After 40 years of professional service, Fraser was honored as a recipient of the GE Edison Award (GE acquired Vetco in 2007). The prestigious award is given to just a handful out of thousands of GE technologists for their outstanding contributions and comes with a $25,000 donation made by GE to an institution of higher education.

Fraser chose Cal Poly Engineering to receive the gift.

"It has been nearly 40 years since I graduated from Cal Poly, but it really seems like yesterday," said Fraser. "I have many fond memories of my time spent there and I'm glad that I'm able to give something back through this award."

Now a chief consulting engineer for drilling, Fraser is also a parent of a Cal Poly graduate. His daughter Jennifer graduated in 2001 with a degree in business administration. ■

Thomas Fraser (ME '73) received the 2012 GE Edison Award.

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Cal Poly's HCI Lab Makes World More User Friendly

Making high tech a more rewarding human experience is the premise of Cal Poly's new Human-Computer Interaction (HCI) Lab, a facility where students learn how to put the user at the center of product development and to adapt technology to people's everyday and working lives.

HCI was a vision shared by many when, two years ago, Remilon, an innovation software company, committed $35,000 as a lead gift and first step to the $100,000 needed to establish the lab.

And donors did step up, from individual alumni, department industry advisory board members and graduate students to a senior class gift and a generous contribution of equipment from Remilon.

CSC Students are able to observe human-computer interaction in the new HCI Lab.

"We know Cal Poly's computer science and software engineering graduates create some of the world's best software systems and mobile applications," said Ignatios Vakalis, chair of the Computer Science Department. "But can they also create products that are user friendly? Absolutely."

Remilon CEO and founder, **Adrian Ridner** (M.S., Computer Science, 2004), noted that the lab's contribution to student learning and the industry is significant. "My Cal Poly education helped me establish a successful company, but we needed a strong understanding of HCI to grow enough to achieve our mission of increasing education accessibility in a truly significant way. When Remilon undertook an HCI study, the results were eye-opening. The improvements on our flagship site, Education-Portal.com, directly contributed to our ability to offer free online courses that have already helped millions of students around the world."

See Remilon's Education Portal Academy at http://education-portal.com/academy/course/index.html.

"The HCI lab is dedicated to enhancing the way people work and communicate," said Engineering Dean **Debra Larson** at the lab opening. "The world is becoming more automated and digital every day. The lab will be vital in keeping our students apace of the trends and technologies. Moreover, establishment of this lab serves as a model of how higher education can move forward to develop new cutting-edge curriculum and facilities in partnership with alumni, friends and industry." ■

HCI Projects

Augmented reality mobile browser application

Interdisciplinary team: Computer science, computer programming, software engineering and architecture undergraduates

Project description: Evaluate and design an augmented reality mobile browers application that makes it simple for users to navigate and find points of interest in a building or other environments.

Related link: http://vimeo.com/39709240

Adaptive EEG headset for the disabled

Master's thesis project project description: Integrating a wheelchair control panel and an electroencephalography (EEG) headset that records brainwaves in order to give disabled users efficient and precise control of communication devices such as cell phones and computers.

3D underwater site reconstruction

Multidisciplinary team: Undergraduate students from computer science and materials engineering

Project description: To design, test and deploy hardware for a micro-sized remotely operated underwater vehicle (ROV) to study wells, cisterns and water storage systems of archeological interest, together with software that can integrate data into 3D models.

1953 Mechanical Engineering Alumnus Jack Dawson Makes a Return on Investment

Cal Poly's College of Engineering announced a $250,000 gift from 1953 mechanical engineering graduate **Jack Dawson**. On the memo line of the check, Dawson wrote "Return on Investment."

Dawson believes that the education he received at Cal Poly was a big part of his career success. Inspired by the recent establishment of Cal Poly's Critchfield Mechanical HVAC&R Laboratory, Dawson and his wife Barbara made a $250,000 gift to found an endowment for shop expenses and student technicians to support the Student Fabrication Labs run by the Mechanical Engineering Department.

Dawson is retired as president of the Dawson Company. Founded by his father in 1948, the company began as a manufacturer's representative for several companies making refrigeration components.

> **"Cal Poly is almost unique in Learn by Doing. The lab work [I had] in addition to academics included learning to machine and weld."**
>
> **Jack Dawson**

In making his gift, Dawson said, "Cal Poly is almost unique in Learn by Doing. The lab work [I had] in addition to academics included learning to machine and weld."

"The Student Fabrication Labs are open to all Cal Poly students and this gift will help ensure that they are well supplied, in good shape and available to help our students turn their dreams into reality," said **Andrew Davol**, chair of the Mechanical Engineering Department. "This significant donation will forever impact how we are able to maintain these Learn by Doing facilities." ■

Andrew Davol, Mechanical Engineering Department chair, at left, meets with Barbara and Jack Dawson (ME '53).

The Human Powered Helicopter Returns

After 23 years, Cal Poly has restarted an effort to get a human powered helicopter (HPH) off the ground. Cal Poly made history in 1989 when the Da Vinci III flew for 7.1 seconds in Mott Gym. Since then, no team has won the $250,000 Sikorsky Prize for an HPH that flies for at least a minute at an altitude of 9.8 feet. But the 40 members of the new Air Design and Construction Club have a good shot at winning this challenge.

Coming together from disciplines across campus, the students are working on a new HPH platform donated by alumnus **Neal Saiki** (B.S., Aerospace Engineering, 1990; M.S., Aerospace Engineering, 1993). Saiki led the Da Vinci III team when he was an undergraduate.

The HPH team plans to reduce weight by using new composite materials, configure the control system and design and construct spars, rotors and the cockpit. In fact, the HPH has already spawned numerous senior projects.

Individuals interested in supporting the HPH project can contact the faculty adviser **Kurt Colvin** at kcolvin@calpoly.edu or (805)756-2633.

To view a video explanation of the project see http://www.youtube.com/watch?v=Qbeo2iNanmw&feature=youtu.be. ■

The Cal Poly Air Design and Construction Club works on a human-powered helicopter donated by alum Neil Saiki in Mott Gym.

The Missing Link: CP Connect

It's no secret that Cal Poly students and faculty produce scores of sophisticated and innovative projects every year. What businesses and industries might not know is how to partner with the university in order to propose a project or assemble a team of students.

That's why the College of Engineering has established CP Connect, a program that facilitates donor sponsored projects. It's the missing link between donors and corporate supporters and faculty and students.

"We introduced CP Connect last year to help corporations partner with us," said **Rich Savage**, director of the program. "CP Connect not only identifies projects, but also recruits faculty and students and organizes them into multidisciplinary teams of five or six based on individual interests and expertise and project needs. In addition, CP Connect ensures accountability because we return the project outcome and final reports back to the project sponsors."

> ***"CP Connect not only identifies projects, but also recruits faculty and students and organizes them into multidisciplinary teams of five or six based on individual interests and expertise and project needs."***
>
> **Rich Savage**

In 2011-12, CP Connect funded 15 interdisciplinary projects, and the word is out this year that CP Connect is a great way to participate in multidisciplinary senior projects. In fact, more than 80 students showed up at the program's fall meeting to fill out applications.

"We identify projects that enable students to explore the integration of technologies to solve problems," said Savage. "More and more, students understand the importance of working across disciplines in teams. That's becoming the industry norm because products and systems must take a variety of challenges into account: cost, efficiency, environmental and societal outcomes, use of resources, etc. All these factors are part of innovation in today's marketplace. CP Connect can help ensure that Cal Poly students have the project experience they need."

Last year, with financial support from alumnus **Gary Dillabough** (B.S., Civil Engineering, 1987), CP Connect partnered with the non-profit agency One Million Lights to initiate the LunaLight project, an effort to replace kerosene lanterns in developing countries with solar-rechargeable LED lanterns. The LunaLight team included five entrepreneurial engineers working in conjunction with finance and graphic communication students. ■

ESC

ENGINEERING STUDENT COUNCIL: For 2012-13, the Engineering Student Council includes, front row from left: Robby Potter (University Events Director), Anthony Lipscomb (Website Director), Megan Buck (Clubs Director), Gilenn Collado (Publicity Director) and Christopher Boyer (Community Director); Back row from left: Cameron Naugle (Corporate Director), Michael Waddington (President), Mark McNeff (VP of Events), Michael Roberts (VP of Communications), Sean Youra (eWeek Director). Not pictured: Melinda Phan (VP of Finance).

Cal Poly Named Nation's Top State-Funded Engineering College by U.S. News

Cal Poly's College of Engineering was named the nation's top state-funded undergraduate engineering program in U.S. News & World Report's 2013 America's Best Colleges guidebook.

The only public institutions listed ahead of Cal Poly were the federally-funded U.S. Military Academy, U.S. Air Force Academy and the U.S. Naval Academy.

The magazine rankings are based solely on a survey of engineering deans and senior faculty at all accredited programs that grant bachelor's and master's degrees. Universities that grant doctorates are ranked separately.

"Cal Poly has ranked among the nation's very best engineering colleges for more than a dozen years because of a number of factors," noted Cal Poly Engineering Dean **Debra Larson**.

"We have a very high national profile first and foremost because of our outstanding student teams. Our Society of Civil Engineers, Society of Women Engineers, Society of Hispanic Professional Engineers, and aeronautical design teams, to name a few, win national competitions year after year. The achievements of these outstanding students enhance our fame.

"Cal Poly also tops the national ranking because so many of our faculty members participate in external activities and conferences that boost scholarship and innovation in engineering and education. Many Cal Poly Engineering faculty members, in fact, collaborate with colleagues from other universities on important applied research," explained Larson.

"I've said it before: our exceptional reputation is about Learn by Doing, which means outstanding students and a great faculty focused on student learning and student projects," she said. "And while it's an honor to be ranked so high, it's important that we continually improve to meet the evolving needs of industry and society. That's why our college motto is 'Learn by Doing, lead with innovation.'"

College of Engineering programs also ranked high in the Best Undergraduate Engineering Programs in their individual specialty categories. The university's computer, electrical and mechanical engineering programs were each ranked as the top program at a public university. Cal Poly's civil and environmental engineering as well as the university's aerospace engineering program were ranked the second best programs at a public university.

For the 20th straight year, Cal Poly as a whole was rated the best public-master's university in the West. Cal Poly ranked sixth in the magazine's overall list of the West's best universities, including both public and private institutions that provide "a full range of undergraduate and master's-level programs but few, if any, doctoral programs."

See U.S. News online at www.usnews.com. ■

EPIC

Engineering Possibilities in College camp allows middle and high school students to learn about engineering and experience hands-on labs in a university atmosphere.

A total of 180 teens and pre-teens converged on the Cal Poly campus July 16-20 to build bridges, launch rockets, design and race solar cars, program robots and much, much more.

It was all part of EPIC (Engineering Possibilities in College), an annual summer program that immerses young campers from seventh to twelfth grade in a wide array of labs and activities that include software design, spaceships and cities of the future. Now in its fifth year, the event targets underrepresented students, as well as those who may not have considered a career in engineering.

Previously limited to high school students, the EPIC program grew this year to include 40 middle school students. The expansion was made possible by a $15,000 grant from the Goodrich Foundation.

"EPIC is strongly aligned with the Goodrich Foundation's commitment to start early to connect students with science and engineering," said Marc Duvall, president of Goodrich Aerostructures in Chula Vista, Calif.

Said **Debra Larson**, dean of Cal Poly Engineering: "The camp is all about making the world of engineering and technology come alive for these students — catching them at that critical age when they're forming their sense of possibility.

"Studies show that students are more likely to consider a career in engineering after learning about the breadth of what engineers actually do. And that's where EPIC excels."

The camp's 27 hands-on labs spanned aerospace, architectural, biomedical, civil, computer, electrical, environmental, industrial, manufacturing and materials engineering. Labs offered through Cisco, Lockheed Martin and Raytheon were also among the lineup this year.

In addition to faculty-led labs, four labs were taught by Cal Poly American Institute of Aeronautics and Astronautics (AIAA) students.

Concurrent with EPIC, there was something for educators, too. Cal Poly Computer Science hosted a free Google-sponsored computing education workshop for grade 5-12 educators. The two-day "CSEverywhere" workshop was held on campus July 18-19. For more information, go to http://cseverywhere.org/.

For more on EPIC, go to https://epic.calpoly.edu. ■

Order of the Engineer welcomes Cal Poly initiates

Last June, more than 40 graduating seniors took the engineering equivalent of the Hippocratic Oath. Initiates in the Order of the Engineer pledge to "uphold the standards and dignity of the engineering profession and to serve humanity by making the best use of Earth's precious wealth." The Cal Poly Engineering Student Council promotes membership in the engineering ethics society to stimulate pride in the engineering profession and foster an awareness of the ethical commitment engineers make in practicing their profession.

Flying high in Aviation Week

Readiness of Cal Poly engineerging grads tops list by magazine

The Day One readiness of Cal Poly graduates has landed the school at the top of the rankings in Aviation Week's Workforce Study category of go-to universities. Aviation Week and Space Technology's annual study has been a mainstay for aerospace and defense (A&D) industry recruitment, planning and trend analysis since 1997.

It is the second consecutive year that Cal Poly has been named No. 1, although this year the spotlight was divided into three different ranking categories.

New for the 2012 study, Aviation Week used three lenses to examine the schools most likely to supply the science, technology, engineering and math talent needed for the future: 1) the preferred, go-to schools for hiring quality grads; 2) the universities where A&D hired the most graduates; and 3) the schools young professionals believe give them the edge in being hired and promoted. In that order, the troika of schools at the top includes Cal Poly, Iowa State University and Georgia Institute of Technology.

"'Go to' so aptly encapsulates our graduates' ability to 'go do,' "said **Debra Larson**, dean of Cal Poly Engineering. "The ranking validates the college's Learn by Doing paradigm in real-world terms – and by an industry sector that's at the fore of the future. We are immensely proud to be recognized as a leading resource for highly skilled graduates who are trained, ready and inspired to help take these industries to new levels."

According to Aviation Week, a major concern among industry respondents is the lack of high-level knowledge and experience needed for many positions in A&D: "[There's] the need for people who can dream and create; develop new technologies, products and services; and connect the dots between what is possible and anticipate the next need."

Those needs, said Larson, "are the very areas in which Cal Poly graduates excel."

And the graduates themselves agree. In addition to its standing among recruiters, Cal Poly won high marks from recent grads, placing third among schools considered to have "made a difference" in young professionals' career success. ■

AERO students Eric Paciano and Jonathan Lichtwardt work on the AMELIA wind tunnel model.

Cal Poly Engineering Students Winners at Statewide CSU Research Competition

Marcus Foley and **Rachel Gohres** both transferred into biomedical engineering from other majors because of their excitement about tissue engineering. Their passion for research in the field has brought them first and second place awards at the California State University (CSU) Research Competition held in May at Cal State Long Beach.

Foley and Gohres competed against more than 200 students representing the 23 CSU campuses who presented the results of their original research, scholarship and creative work to panels of judges.

Foley, a graduate student from Bakersfield, won first place for his work using sandblasting to optimize cell and tissue interactions with implanted medical devices. He received funding for his research from Abbot Vascular.

Gohres, an undergraduate student from Murrieta, took second place for her analysis of how protein coatings affect endothelial cell adhesion in an effort to improve implanted vascular devices.

Both Foley and Gohres work with Biomedical Engineering Professor Kristen Cardinal in the tissue engineering lab on campus. According to Gohres, the ultimate goal of their work is to develop a fully-functional blood vessel mimic to test intravascular devices, such as stents.

"I love my major," said Gohres. "I joined the department because it's super cool to use technology to help people."

Also representing Cal Poly were computer science students **Eriq Augustine, Cailin Cushing** and **Matt Tognetti;** chemistry students **Sam Mann** and **Megan Hill;** biochemistry students **William Grau** and **Vanessa Hancock;** civil and environmental engineering student **Gregory Olsen;** and dairy science student **Jenifer Tharani.**

Participants are first nominated by their respective colleges and then selected in a preliminary competition at Cal Poly. Final competitors submitted written papers and made oral presentations to juries of experts. ■

Biomedial Engineering students Rachel Gohres, left, and Marcus Foley placed second and first at the Cal State University Research Competition in May. More than 200 students competed.

Cal Poly Human Powered Vehicle Runs Strong in ASME Competition

Cal Poly won first place in design and placed second overall at the 2012 ASME Human Powered Vehicle Challenge at the Miller Motorsports Park in Tooele, Utah.

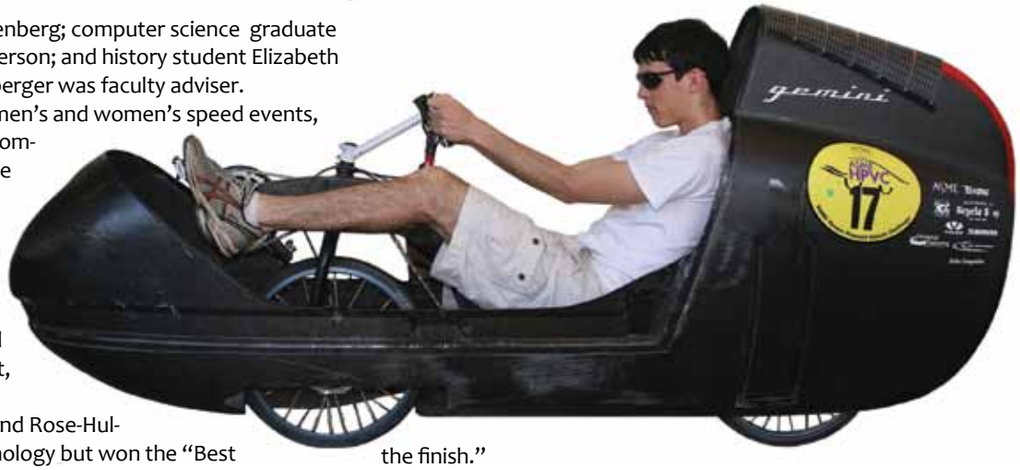
When final results were tallied, Cal Poly was bested by 1/100th of a point by Missouri University of Science and Technology. The design event, which contributed the largest portion (40 percent) to the contestants' overall scores, was judged in six areas: design, innovation, analysis, testing, safety and aesthetics.

"It is the one part of the competition where luck doesn't play a part," said **George Leone**, technical adviser for the team.

"Cal Poly won the design phase with an innovative fiber-over-foam frame to minimize weight, and a fabrication method that increased the vehicle's strength by 30 percent," said Leone. "Another impressive feature was the students' integration of solar panels into the carbon chassis and carbon/Kevlar fairing — a cover for rider protection and aerodynamics — to charge the iPhone navigation system."

Team members included mechanical engineering students Cody Anderson, Peter Aumann, Matt Baker, Cameron Christenson, Katie Hahn, Trent Hellman, Tim Hoekstra, Chris Hunt, Sam Juday, Alex Powers, Lauren Romero, Josh Smith, Samantha Weiner and Zack Yasuda; third-year aero student Will Hilgenberg; computer science graduate student Kimberly Patterson; and history student Elizabeth Metelak. Kim Shollenberger was faculty adviser.

Competing in the men's and women's speed events, which represented a combined 30 percent of the overall score, Cal Poly placed second to Missouri S&T in both races. In the two-and-a-half hour endurance race, which accounted for another 30 percent, Cal Poly came in third, behind Missouri S&T and Rose-Hulman Institute of Technology but won the "Best Crash" award in the process.



"The bike went off course over a berm," said Leone, "and the team dragged it back onto the course — with the rider still inside. The fairing was that tough, and they had full confidence in its structure. They flipped it upright, and the rider rode back into the race.

"When they scored the overall results, Missouri S&T beat us 86 to 85.99 — a competition well fought right to the finish."

ASME, founded as the American Society of Mechanical Engineers, promotes the art, science and practice of multidisciplinary engineering and allied sciences around the globe. ASME's international Human Powered Vehicle Challenge provides an opportunity for graduate and undergraduate students to demonstrate the application of sound engineering design principles in the development of sustainable and practical transportation alternatives. ■

Scholarship Program Brings New Faces to the College of Engineering

Cal Poly Scolars, left to right: Adam Espinosa (Computer Engineering), Andy Matsumoto (Computer Science), Geoff Wacker (Computer Engineering), Angelina Quach (General Engineering), Robert Myers (Mechanical Engineering), Thuytien Nguyen (Environmental Engineering), Joaquin Barron (Civil Engineering), and Ivan Cheng (Aerospace Engineering).

The first batch of Cal Poly Scholars was welcomed to campus by Cal Poly President **Jeffrey D. Armstrong** and his wife Sharon at a reception at their home in late September.

Initiated by Armstrong to help support a more diverse and culturally competent student body, the Cal Poly Scholars Program is aimed at students whose families earn less than $80,000 annually. Many of the students come from Cal Poly's Partner Schools, a collection of California public high schools that serve a low-income population and which have low percentages of students advancing to college.

The scholarship criterion also includes students who are National Merit Scholars, National Hispanic Scholars or National Achievement Scholars.

The 14 engineering first-year students who received awards represent the first of what Armstrong hopes will be hundreds of Cal Poly Scholars. "We've established first cohort of Cal Poly Scholars in the College of Engineering, but we intend to grow the program across the university and increase the amount of the scholarship awards by raising additional resources from donors and industry partners," he said.

In welcoming the students, Armstrong said, "Many of you, like me and Sharon, are the first in your family to go to college. We want to give you the tools and support you need to succeed."

The scholarship program not only provides an iPad and a $3,000 housing grant renewable for up to four years, but also offers programmatic aid to support the students' academic progress.

The new first-years were excited about having been chosen for the scholarship and they seemed equally enthusiastic about their classes. "Cal Poly was my top choice and I was literally dancing in joy when I learned that I had been chosen for this scholarship," said Andy Matsumoto, a computer science major from El Monte, Calif.

"I feel like my future is made," said **Geoff Wacker**, a computer engineering major from Norco, Calif. "My classes are challenging, but we're already designing and building computer games in the first-year course. It's awesome." ■

Engineers Without Borders Honored at Conference

With global projects in India, Thailand and Nicaragua, Engineers Without Borders-Cal Poly recently undertook another project closer to home: It hosted Engineers Without Borders' (EWB) West Coast regional conference on the Cal Poly campus Oct. 19-21, which drew more than 250 attendees.

During the conference, the Cal Poly chapter received several awards, foremost among them recognition as the Premier West Coast Chapter. The award makes Cal Poly – which was named National Premier Student Chapter in March – eligible to compete for the national title again next spring.

Cal Poly and UCLA student chapters tied for the Regional Champion Award, which recognizes outstanding service in the developing world in addition to efforts and leadership that benefit EWB's West Coast region as a whole. The award includes $500 for each chapter.

In addition, Cal Poly was a runner-up for the Tyler Palmer Design Competition for the chapter's innovative and sustainable septic system design in India.

For more information about EWB-Cal Poly, visit http://ewb-calpoly.org. ■

Sending Signals:

The Cal Poly Amateur Radio Club raises a new antenna tower

Marcel Stieber (EE) led the Cal Poly Radio Club's antenna campaign.

Soaring 72-feet above Electrical Engineering Department labs on campus, the Cal Poly Amateur Radio Club (CPARC) unveiled its new antenna tower in mid-September. The state-of-the-art communications infrastructure will enable students, faculty and community members to send and receive radio signals worldwide.

The TX-472MDPL telescoping antenna tower was donated by the US Tower Corp., and Ham Radio Outlet provided funds for equipment and materials. Additional support included a donation of antennas from Robert Ferrero W6KR, gifts from Joe Cardoza KJ6TPW and Barry Soben K6BRS, and a $10,000 grant from the Peterson Charitable Remainder Unitrust.

Current and past members of the Cal Poly Amateur Radio Club met for the antenna unveiling in mid-September, including 103-year-old Harry Wolf, bottom row center

"**Dennis Derickson**, chair of the Electrical Engineering Department, supported the project from its earliest planning stages," said electrical engineering graduate student **Marcel Stieber**; "and Bill Kellogg, head of Agricultural Education and Communication, provided tremendous assistance with the technical aspects. Bob's Crane Service and CalPortland also helped.

So many people and companies had a hand in raising the tower – the club dedicated it in memory of George Varvitsiotes (1954-2012), the initial driving force," explained Stieber.

CPARC was founded in 1947 and has a tradition of communications service on campus and in the community. The club maintains Emergency Communications Station No. 16 for San Luis Obispo County to support various public safety agencies in the event of a disaster and also provides communications for events, such as bicycle races, triathlons and parades.

On hand for the tower dedication was the founding CPARC club advisor, Harry Wolf (call number W6NKT). At 103, Wolf is one of the oldest active amateur radio operators in the world.

For more information about the club, visit www.w6bhz.org. ■

CENG Announces 2012 Outstanding Graduates

In May, Cal Poly Engineering announced its 2012 Outstanding Graduates for academic excellence, as well as service to the college, university and the community.

Mechanical engineering senior **Gordon Cline** from Loomis, Calif., was recognized as the College of Engineering's topmost graduating senior for academic excellence. Cline earned a 3.965 GPA, including eight quarters in which he had perfect 4.0s. As a fourth-year student, he studied abroad at the Hochschule München in Munich, Germany, and then worked at the Munich office of GE Global Research. The experience inspired him to minor in German. After graduation, he will launch his career with Siemens Energy in Orlando, Fla.

Outstanding engineering students from left, Dart Newby, Morgan Miller and Tyler Smith.

In the categories of service to the community, college and university, the following graduating seniors were recognized:

■ The Outstanding Graduating Senior for Contributions to the College of Engineering was biomedical engineering senior **Dart Newby** from Oakdale, Calif. His involvement in Engineering Ambassadors as a member, external relations chair and current president has made Newby a highly public face of the college. In addition, as a director of Students for Health and Well Being in Student Community Services, Newby organized a spectrum of outreach activities both on and off campus, including health information sessions, bone marrow drives, a survey on hunger for the county's public health department, senior citizen events, healthy cooking classes, and a smoking cessation campaign.

"Dart has clearly demonstrated that biomedical engineers aren't just concerned with building the next medical device, but also take a holistic view of human health and place value on health education," said **Trevor Cardinal**, assistant professor in biomedical engineering. "He has also been involved in extracurricular and interdisciplinary research, working with Professor **Emily Fogle** in the Chemistry Department to better understand metabolic processes that contribute to obesity."

■ Civil engineering major **Morgan Miller** was named the Outstanding Graduating Senior for Contribution to the University.

"Morgan has been a champion of students in the College of Engineering as well as our department," said **Rakesh Goel**, chair of the Civil and Environmental Engineering Department. Miller has served as education outreach director, vice president of community outreach and president for Cal Poly Society of Women Engineers; vice president and event coordinator for Chi Epsilon, the civil engineering honor society; member of the Society of Civil Engineers, National Society of College Scholars, and the college's Innovate by Doing task force - all while maintaining a strong GPA and gaining extensive practical engineering experience during her summers with the U.S. Army Corps of Engineers.

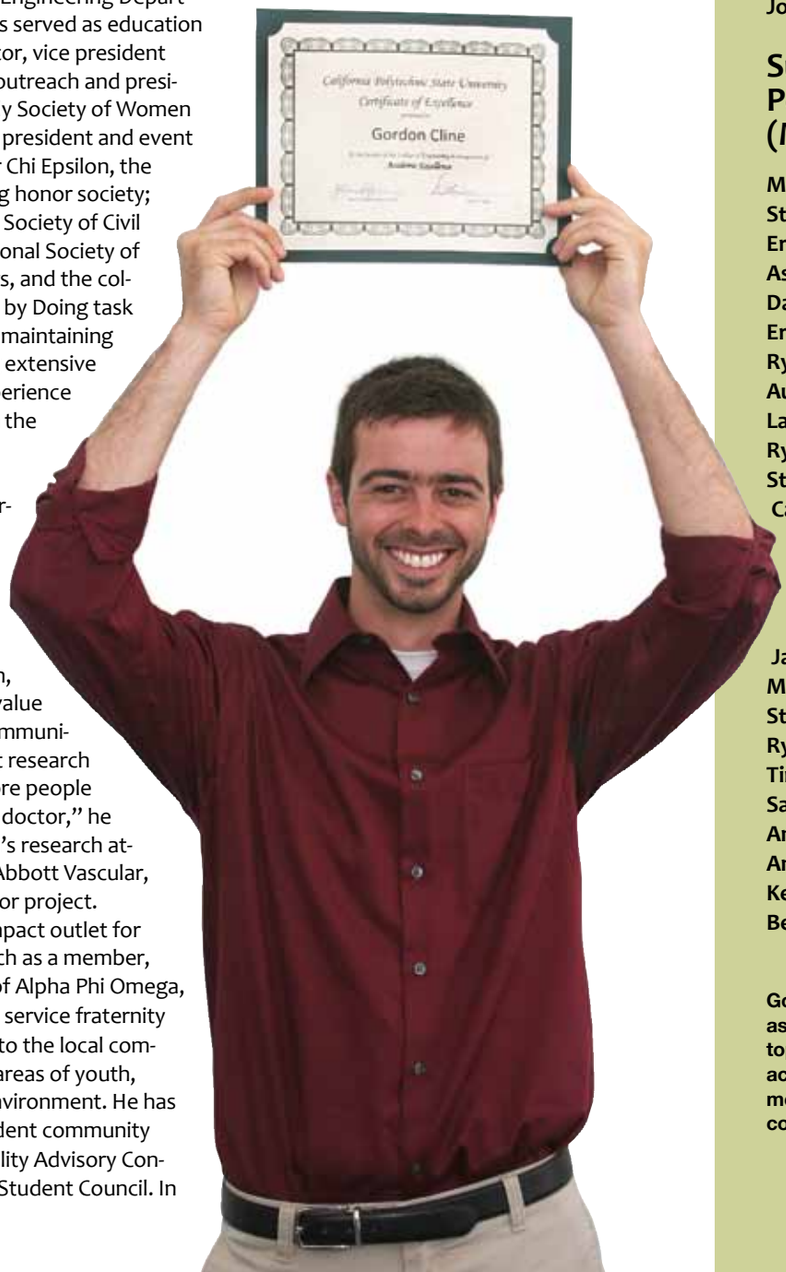
■ Biomedical engineering senior **Tyler Smith** was named the Outstanding Graduating Senior for Service to the Community. Introduced to research as a freshman, he immediately saw the value of research applied to community service. "I realized that research results can impact far more people than the work of a single doctor," he says. The caliber of Smith's research attracted the attention of Abbott Vascular, which sponsored his senior project.

Smith found a high-impact outlet for his service-based approach as a member, treasurer and president of Alpha Phi Omega, a national co-educational service fraternity that actively contributes to the local community, especially in the areas of youth, senior citizens and the environment. He has also represented the student community through the Student Quality Advisory Connection and Engineering Student Council. In addition, through his participation in the International Computer Engineering Experience last year, Smith benefited the international community with his role in the mapping of ancient Roman cisterns in Malta.

A record number of top graduating master's degree students achieved a statistical dead heat in outstanding academic credentials - with GPAs ranging from 3.8 to 4.0.

Graduate student **William Fletcher** is graduating with distinction from the Fire Protection Program.

Cline, Newby, Morgan and Smith were each presented a cash award by Raytheon in recognition of their achievements. ■



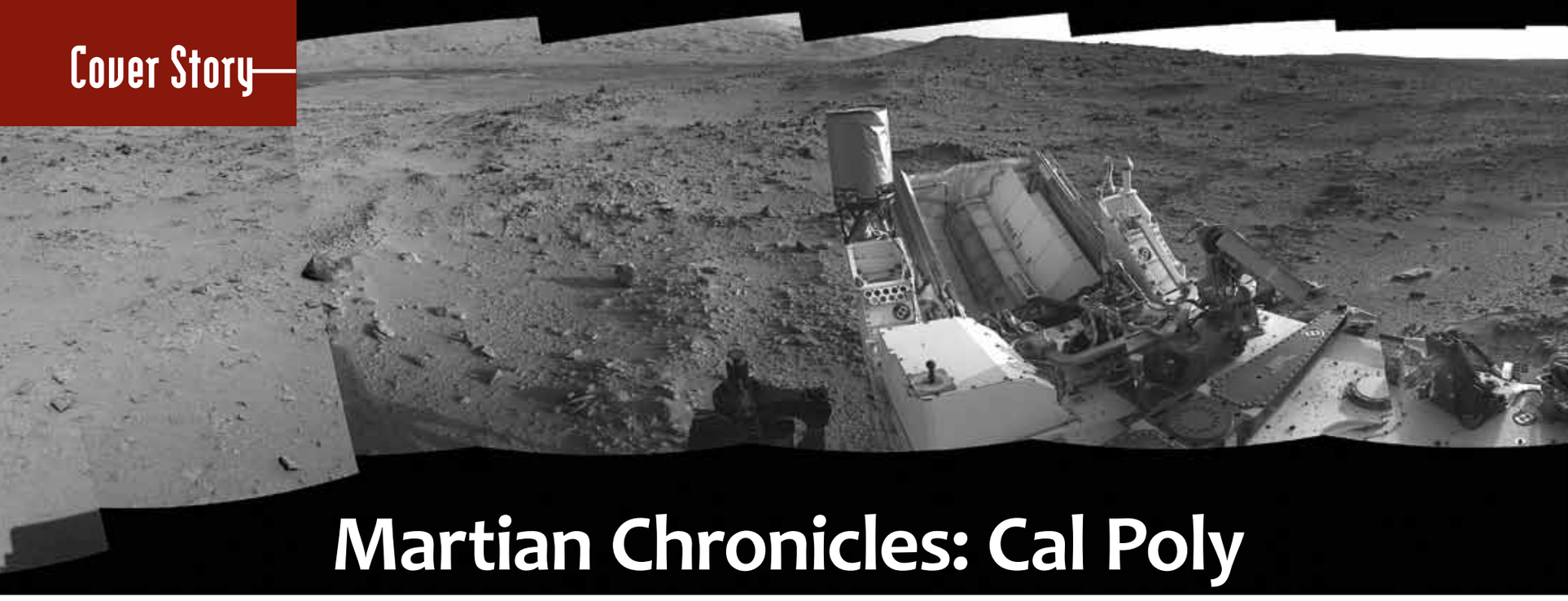
Gordon Cline was recognized as the college of Engineering's topmost graduating senior for academic excellence. Cline, a mechanical engineering student, compiled a 3.965 GPA.

Superior Academic Performance (Seniors)

Javen Foster-Oneal (AERO)
Nichole Shaw (BME)
Cameron Cavallo (CE)
Andrew Lehmer (CPE)
Raymond Wong (CSC)
Owen Jong (EE)
Matthew Sittel (ENVE)
Christyn Cunningham (GEN)
Megan McIntyre (IME)
Grayson Dawdy (IME)
Michael Deagen (MATE)
Jonathan Rawson (SE)

Superior Academic Performance (Masters)

Max Glicklin (AERO)
Steven Korn (AERO)
Eric Watson (AERO)
Ashwini Bhat (BME)
David Landon (BME)
Erica Wong (BME)
Ryan Houghton (CE)
Audrey Austin (CE)
Lawrence Johnson (CE)
Ryan Schmitt (CSC)
Stephen Holsapple (CSC)
Cailin Cushing (CSC)
Derek Hines (EE)
Steven Pungdumri (EE)
Anthony Ma (EE)
Patrick McBride (MATE)
Jack Baker (Engineering Man.)
Mark Farraresi (FPE)
Stewart Peugh (IME)
Ryan Chang (IME)
Timothy Chuc (ITM)
Sarina Surrette (ITM)
Amanda Crissman (ITM)
Andrew Olson (ME)
Kevin Yamauchi (ME)
Ben Johnson (ME)



Martian Chronicles: Cal Poly Alums' Contributions to Curiosity

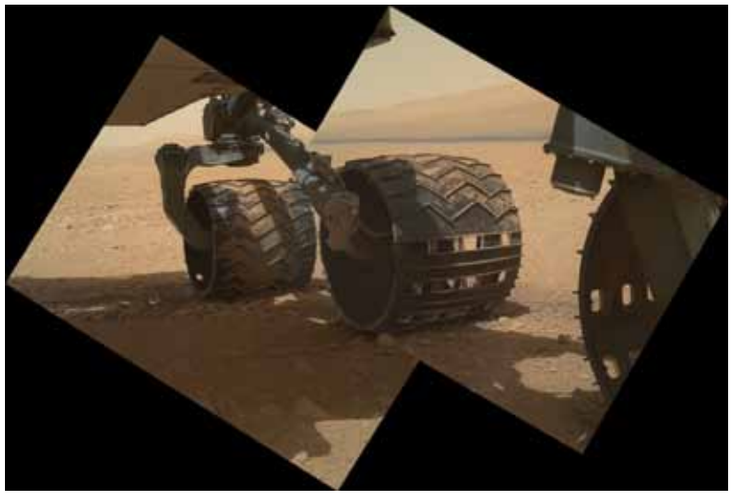
Engineering grads are part of the team that designed and built the next-generation Mars rover

At least 30 Cal Poly Engineering alums have been working remotely – more than 100 million miles from their job site: the Mars Science Laboratory.

These hands-on, minds-on grads are part of NASA's Jet Propulsion Laboratory (JPL) team that engineered Curiosity, the next-generation rover whose wondrous touchdown on Mars is matched only by the lofty goals of her mission. Packed with super high-tech science gear and powered by nuclear batteries, Curiosity will help scientists unearth Mars' mysteries. As she settles into her two-year mission, the SUV-sized rover will traverse up to about 660 feet per day; gather, test and analyze soil and rock samples; and, ultimately, climb up the side of the three-mile-high Mount Sharp. The epic journey will help researchers investigate Mars' climate, geology and its watery past, and, in the Gale Crater area, see if conditions have ever been capable of supporting microbial life.

"As Cal Poly might say, Curiosity was 'Sol One Ready," said **Ken Diaz** (B.S., M.S., Aerospace Engineering, 2006), referring to the Martian day, called a sol, and the school's industry reputation for graduating Day One Ready engineers. In the past year alone Diaz has seen his roles transition with the project from cruise/surface phase systems engineer, to flight director, to tactical downlink lead.

"I was hired in 2006, and I feel privileged to have had a front-row seat to so many phases and aspects of this mission.



This view of the three left wheels of NASA's Mars rover Curiosity combines two images that were taken by the rover's Mars Hand Lens Imager (MAHLI) in September. The camera is located at the end of Curiosity's robotic arm. (Photo: NASA)

"I participated in the early integration and testing of the flight and non-flight hardware and software, and saw the spacecraft launched — which, like the landing, was an event I'll never forget. After launch, I joined the Cruise Phase Engineering Operations team, which was responsible for operating the spacecraft during its transit from Earth to Mars, and I split my time between the flight director and systems engineer consoles. I was fortunate enough to be the systems engineer in the control room on landing night. Currently I'm on the Surface Phase Engineering Operations team."

"It's not uncommon to see Cal Poly grads in engineering leadership positions," said **Leslie Livesay** — who should know. The College of Science and Mathematics alumna (B.S., Mathematics, 1985) is JPL's director of engineering and science, overseeing more than 3,000 engineers, scientists and technologists."

"Cal Poly is really good at creating engineers who take initiative," said **Chaz Morantz** (B.S., Aerospace Engineering, 2009), engineering uplink lead. "We can be thrown into the fire, adapt, take charge, figure out what needs to be done and do it. That's highly valued at JPL where most projects are new in many ways, with a lot of novel problems. Cal Poly engineers excel in that environment."

Said **Mark Heverly** (B.S., Mechanical Engineering, 1999), lead rover driver: "This is real Lewis and Clark stuff. The rover is just a tool. It's still humans exploring Mars."

Tracy Van Houten (B.S., Aerospace Engineering, 2004), project system and mission system verification and validation system engineer, dreamed of working in just such an environment from an early age.

"Cal Poly's whole Learn by Doing process is an ideal match for JPL. It prepared me very well for jumping into situations where there are no easy answers, and everything you do is new."

Tracy Van Houten (B.S. Aerospace Engineering, 2004)

This 360-degree panorama from NASA's Mars rover Curiosity shows the rocky terrain surrounding it on Oct. 1, 2012. (Photo: NASA)

Cal Poly Aerospace Engineering grad Ken Diaz, right, worked in the control room at JPL during Curiosity's landing on Mars. (Photos: NASA)

"I decided I wanted to be at JPL when I was 15. I felt a passion about space, and I liked that everything JPL does is first of its kind. It's always pushing forward our knowledge of the sciences, and that's a frontier where I want to be.

"Cal Poly's whole Learn by Doing process is an ideal match for JPL. It prepared me very well for jumping into situations where there are no easy answers, and everything you do is new.

"The marvel of the Curiosity landing has reinvigorated the public's interest in the space program, and is showing the value of robotic exploration. This mission is engaging people — especially young people — in ways that have never been seen before because of the Internet access and opportunities for social media interaction."

Recalls Morantz: "The chief engineer gave us a pep talk before landing. He said this might be the most complicated endeavor that mankind has ever attempted. No one person understands it all. No one can grasp the entire complexity of what we're working on. We have to trust each other, interface with each other. That's the miracle of it. Truly a collaborative project."

Related links:

- Curiosity Explores Mars http://www.jpl.nasa.gov/msl/
- Mars Exploration Program http://mars.jpl.nasa.gov/
- Live from NASA JPL: Mars Rover Curiosity Landing http://news.discovery.com/space/live-mars-rover-curiosity-landing-120802.html
- New York Times on Matt Heverly ("Mow Yard. Drop Off Kids. Take a Drive on Mars") http://www.nytimes.com/2012/09/09/science/space/steering-a-rover-on-mars.html?_r=1
- ASME News, with quotes from Rius Billing (B.S., engineering technology, 1989), MDA Information Systems http://www.asme.org/kb/news---articles/articles/aerospace---defense/curiosity-explores-the-red-planet
- Santa Maria Times, quote from **Matthew Bush** (B.S., mechanical engineering, 2008), Helical Products Co. http://santamariatimes.com/news/local/from-santa-maria-to-space/article_80235660-dd35-11e1-abf8-001a4bcf887a.html ■

Paddling to Victory:

Cal Poly claims national concrete canoe championship for the third year in a row

For the third consecutive year, Cal Poly won gold at the National Concrete Canoe Competition, considered the America's Cup of Civil Engineering.

The team's three-peat came in a canoe aptly named Prospector in honor of the California Gold Rush.

The American Society of Civil Engineers' (ASCE) 25th annual National Concrete Canoe Competition was held June 14-16 at the University of Nevada, Reno.

Cal Poly was among 22 top engineering schools at the prestigious event that challenges students' knowledge, creativity and stamina while showcasing the versatility and durability of concrete as a building material.

The competition was broken into four equally weighted categories: final product, design paper, technical presentation and races. Cal Poly placed first in three categories and third in technical presentation.

"We put in 5,250 hours on the development of Prospector," said **Erik Bjornstrom**, project manager. "We applied innovative and sustainable practices to every aspect of its construction. That included testing 160 different concrete mixes, eliminating a layer of reinforcement and incorporating more sustainable materials."

For the first time in several years, the rules allowed teams to develop their own custom hull design. "The extra task challenged our already tight schedule," said Bjornstrom, "but we worked hard and stayed organized."

"When all is said and done," said **Gavin Miller**, a construction captain, "our biggest edge is the level of support we receive from alumni, sponsors, faculty and previous captains. The transfer of knowledge from one team to another is one of this team's greatest assets."

> **"Our biggest edge is the level of support we receive from alumni, sponsors, faculty and previous captains. The transfer of knowledge from one team to another is one of this team's greatest assets."**
>
> **Gavin Miller**
> construction captain

Cal Poly team members included **Erik Bjornstrom**, project manager; **Kevin Galloway**, **Jazz Gilbert** and **Gavin Miller**, construction captains; **Gary Gasperi**, **Krystian Samlik** and Shane Smith, mix design captains; and paddlers **Jason Armes**, **Heather Baessler**, **Alicia Welling** and Miller. Team adviser was **Garrett Hall**, and **Gregg Fiegel** was ASCE student chapter adviser.

Major sponsors of the team were C.C. Myers, Cannon, Shimmick Construction and Traylor Bros. Inc.

For more information, go to www.asce.org/concretecanoe. ■

Buoyant with Success: Why Cal Poly floats to the top

The July 2012 issue of Chemical & Engineering News shares some of the secrets for Cal Poly's buoyant success at the National Concrete Canoe Competition (NCCC), where the team won the national championship for the third consecutive year.

Cal Poly's winning vessel Prospector weighed 170 pounds, which is on the lighter end of concrete canoes.

"Teams have been getting pretty light with their canoes in the past few years," noted **Erik Bjornstrom**, the Cal Poly team's project manager.

It's a trend in the competition that Lacey N. Williamson, chair of the NCCC committee, attributes to advances in materials.

"Typical concrete is a stew of cement; aggregates such as crushed stone; and admixtures, which are chemicals that can alter the air and water content of the final product. Instead of stone aggregates, many teams, including Cal Poly's, are now using lightweight glass beads to give their canoes extra buoyancy," says Williamson.

See http://cen.acs.org/articles/90/i28/Math-Hard-Floating-Concrete.html for more. ■

The mixer drum on this Hanson Aggregate concrete truck is painted to honor the Cal Poly Concrete Canoe Team's three straight national championships.

Soaring Once Again: Cal Poly wins AIAA Undergraduate Design Competition

Continuing a decade of remarkable finishes in the most prestigious national collegiate aeronautical engineering design contest, Cal Poly aerospace seniors swept first, second and third place in the 2011-2012 American Institute of Aeronautics and Astronautics Foundation (AIAA) Undergraduate Team Aircraft Design competition in early September.

Led by faculty advisors **Bruce Wright** and **Robert McDonald**, the Cal Poly teams won for their designs of an unmanned aerial vehicle that serves as a humanitarian response aircraft system capable of providing aid to the populations of both developed and under-developed nations worldwide when natural disasters occur.

The Cal Poly team Halo, consisting of **Saeed Aliasgarian**, **Dennis Boettcher**, **Spencer Dineen**, **Grant Glazebrook**, **Ryan Hueners**, **Timothy Johnson**, **Lacey Jones**, and **Daniel Marx** won the first-place award for its design of the "Honey Badger."

Second place went to the Cal Poly team Orange Sky Designs for the design of the "Breton and Radio Flyer." The team included **Brian Barker**, **Kevin Condron**, **Austin Doupe**, **Eric Gray**, **James Koch**, **Jeff Massman**, **Terry Muy** and **Matt Remington**. Cal Poly's Nimbus Aircraft team, which included **Cameron Chan**, **Adam Chase**, **Mike Darling**, **Albert Liu**, **Brian Marchini**, **Stewart McDougall**, **Samantha Sink** and **Peter Sudak**, finished in third place for its design of the "Guardian."

Above, Cal Poly's Team Halo won first place at the AIAA Undergraduate Aircraft Design Competition for the design of the humanatarian response aircraft Honey Badger, far left. The Guardian, left, designed by Cal Poly's Team Nimbus, finished in third place.

Lacey Jones, team lead for Halo, the first place winner, commented on the design course experience. "The most meaningful aspect of the course was the teamwork and dedication that was put into a class project," she said. "We put so many extra hours into the project to make it a success. It was more than just a project, it felt like we were living and breathing aircraft design all of senior year."

According to Wright, Cal Poly's continued success in the AIAA contest is due primarily to "top notch" student talent. Noting that students choose to enroll in the nine-month aircraft design course, he said, "Being in the lab three days a week, surrounded by 37 AIAA design awards earned by Cal Poly teams since the early 1990s is a great motivator."

"We chose to only enter the undergraduate competition this year as opposed to the graduate and undergraduate competitions last year," said Wright. "Thus, we're happy to report we swept every place that was available to us this year."

For more information, see www.aiaa.org. ■

Cal Poly's "Lamina" Shines at Shell Eco-marathon Event

The Cal Poly Supermileage Vehicle Team helped drive home just how fuel efficient vehicles can be when its entry took a top spot in the sixth annual Shell Eco-marathon Americas competition held March 29-April 1 in Houston, Texas.

The Cal Poly team's wasp-waisted, futuristic-looking vehicle, the Lamina, placed third out of about 50 entries in the event's prototype class and achieved almost 1,400 miles per gallon.

Cal Poly's Lamina placed third at the 2012 Shell Eco-marathon by traveling nearly 1,400 miles per gallon.

In posts to National Geographic's "The Great Energy Challenge" blog, driver Ann Peters reported that, with the Lamina, "...we aimed to combine sleek aerodynamic shapes with ergonomic design in order to minimize weight.

"The vehicle's name is Latin for 'thin layer,'" she noted, "and we felt it described the vehicle's bladelike lines and sharp styling.

"The design begins with a 3-D computer-aided design (CAD) model using SolidWorks software. Then come extensive design reviews. Finally, the whole project ends with the complete manufacturing of the vehicles done entirely on the Cal Poly campus by students."

Cal Poly joined more than 1,000 high school and university students from throughout North and South America who designed and built 113 vehicles to compete in one or both of the event's vehicle classes: Prototype and UrbanConcept.

The Prototype class focuses on innovation and sustainable mobility for the future, with the overall design concept to reduce drag and maximize efficiency. The small one-seaters are built with three or four wheels and have an opened- or closed-top driver compartment. The teams can use either internal combustion or e-mobility energy sources, which include diesel, gasoline, ethanol, FAME, solar, hydrogen and battery electric technologies.

The UrbanConcept class, by contrast, requires teams to design and build four-wheeled fuel-economy vehicles that look similar to the passenger cars seen on the road today.

Cal Poly's multidisciplinary effort combined the efforts of newcomers to the team with veteran seniors. For the Lamina, the student innovators encompassed team manager **Gabriel Mountjoy**, mechanical engineering; **Adriano Agostino**, aerospace; **Aaron Gascoigne**, computer engineering; **John Biddle**, computer science; **Ann Peters** and **Kyle Savage**, materials engineering; and **Jose Garcia** and **Sean Michel**, mechanical engineering. On board the Capax team were mechanical engineering students **Steve Janning**, **Brian Miller**, **Kyla Purvis** and team manager **Timothy Lui**. **Joseph Mello**, associate professor of mechanical engineering, was faculty adviser for both teams. ■

Warren Anderson

Warren Anderson:
An Electrical Engineering institution since 1946

Last spring, Cal Poly Electrical Engineering lost a legendary professor and long-time supporter.

Warren Anderson earned degrees from the University of Minnesota and Louisiana State University. During World War II, he served in the U.S. Army. Following his discharge in 1946, he joined Cal Poly, the year that the Electrical Engineering Department (EE) was founded, although it was first established as the Electronic and Radio Engineering Department.

Anderson served as a professor until 1979, retiring as Department Head, but his passion for the EE Department and Cal Poly lasted the rest of his life. "Not many people get the chance to start at the bottom and build a program beyond the dreams of the time," Anderson says, referring to the growth of the EE department during his career.

In 2001, Anderson established the Warren R. and Dantza Anderson Electrical Engineering Scholarship Endowment.

"I grew up in the Depression, and I know how hard it is to pay for college," Anderson said at the time. "Every little bit helps, and I want to do what I can to assist future students – I can't think of a better way of giving back for what I received."

"Warren played a key role in making the program what it is today," noted EE Chair Dennis Derickson. "He will be missed, but his legacy will live on." ■

Cal Poly CubeSats Exploring Space Debris

When the 200-foot Atlas V rocket was launched from California's Vandenberg Air Force Base on Sept. 13, part of its payload included Cal Poly's 4-inch CP5 CubeSat to study space debris migration.

The CP5 was among 11 CubeSats on board, all stowed in eight Poly PicoSat orbital deployers designed by Cal Poly students.

The Cal Poly CubeSat's payload is designed to test a deployable spacecraft de-orbiting mechanism, consisting of a tiny thin-film solar sail. Once deployed, the sail can be tracked from the ground to detect degradation in altitude or velocity or other changes.

Four of the CubeSats, including CP5, are sponsored by NASA's Educational Launch of Nanosatellites program. Cal Poly leads the program's launch coordination, which involves an international collaboration of more than 40 universities, high schools and private firms.

This was the third launch under the NASA educational program, and three additional missions are planned in coming months. ■

A Cal Poly CubeSat was on the Atlas V rocket launched from California's Vandenberg Air Force Base in September. (Photo: NASA)

Fire Protection Engineering grads William Fletcher, David Phillips, and Mark Ferraresi pose with FPE graduate coordinator Chris Pascual, second from left.

Cal Poly Fire Protection Engineering Program (FPE) Hails First Graduates

The first three graduates of the Fire Protection Engineering (FPE) Program graduated last spring 2012 with a Master of Science degree in Fire Protection Engineering.

All three of the new alumni from the Cal Poly FPE program are currently employed by prominent consulting firms in FPE. William Fletcher works for Aon Fire Protection Engineering in San Diego. Mark Ferraresi works for Hughes Associates in San Ramon and David Phillips works for RJA in San Diego.

The new program continues to grow. In June 2013, approximately 20 students are expected to receive their M.S. degrees. This group of students includes our first part-time students who work full-time and have been taking classes since 2010 through distance learning. ■

Crockett Accepted to National Coleman Fellows Program

Bob Crockett, director of General Engineering in the College of Engineering has been accepted into the Coleman Foundation Faculty Entrepreneurship Fellows program, which brings entrepreneurial education to 16 university and college campuses throughout the U.S.

Additionally, Enrica Lovaglio Costello in the Art and Design Department in the College of Liberal Arts; and Umut Toker, City and Regional Planning Department in the College of Architecture and Environmental Design, were selected along with Crockett to participate through the Cal Poly Center for Innovation & Entrepreneurship. This marks the first time Cal Poly has been awarded this distinction.

Bob Crockett
(GEN)

Cal Poly faculty fellows, guided by Jonathan L. York, associate professor of entrepreneurship and director and founder of the Cal Poly Center for Innovation & Entrepreneurship, will develop courses in their academic discipline that advance self-employment and entrepreneurship. ■

Cal Poly Engineering Announces Two New Department Chairs

Daniel Jansen, above, is the new chair of the Civil and Enironmental Engineering Department, while Richard Savage, right, is the new Materials Engineering chair.

This fall, Cal Poly's College of Engineering welcomed two new department chairs. **Daniel Jansen** was appointed chair of the Civil and Environmental Engineering Department, and **Richard Savage** was named chair of the Materials Engineering Department.

In his new position, Jansen, who joined Cal Poly in 2003, aims to continue the excellence in the department's undergraduate education. "I especially want to support student club activities and student projects as well as foster the growth, quality and reputation of the graduate program," he said.

Jansen's research and teaching has focused on construction and building materials, including concrete and alternative materials such as straw bale construction, manufactured rice straw-based composites and compressed earth. He holds a bachelor's degree in Structural Engineering from UC San Diego and a Ph.D. from Northwestern University.

Savage, a member of the Materials Engineering Department since 2002, is known for his work to enhance multidisciplinary opportunities – in fact, he envisions the department as a leader in innovating interdisciplinary learning experiences.

He is adviser of Cal Poly's Micro Systems Technology Research Group, which involves multidisciplinary projects to design, fabricate and test micro-scale systems. He was also recently appointed director of CP Connect, the college's multidisciplinary senior project program.

"We often are called upon to solve problems that lie at the crossroads of science, engineering and mathematics," he notes. "And we serve society through many technology sectors: life science, energy, defense, transportation, communications, chemical processing and electronics, to name a few.

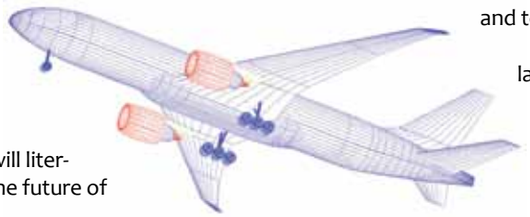
"As the chair, I hope to be able to enable our faculty and students to achieve their professional career dreams by supporting intellectual entrepreneurship at both the undergraduate and graduate level." ■

Cal Poly Aerospace Engineering Helping To Shape Future of Air Flight

Aircraft designers attended an OpenVSP Conference at Cal Poly in late August.

Designs for the aircraft of tomorrow may take off more quickly due to a new open source software program from NASA hosted by Cal Poly.

OpenVSP was unveiled at an American Institute for Aeronautics and Astronautics conference in January, where it was announced that Cal Poly will host and help grow a new online community of aerospace designers, developers, researchers and educators who will literally help shape the future of air flight.



"What's revolutionary about OpenVSP is how very, very quickly you can create a design concept," said Aerospace Engineering Professor **Rob McDonald**. "We're talking minutes, where traditional CAD (computer aided design) systems take days or weeks."

OpenVSP, an open source tool with rapid design and analysis capabilities, allows users to change the shape, size and configuration of their drawings in real time.

"The next two decades are ripe for an aviation renaissance, and this is an example of how NASA is embracing open source technologies to accelerate innovation and collaboration," noted McDonald. "By open sourcing OpenVSP, NASA gives researchers and developers a tool to quickly develop – and share – breakthrough vehicle and technology concepts."

McDonald, who spent last year at NASA's Langley Research Center in Hampton Roads, Va., conducting research in the area of future flight vehicles, was among those instrumental in getting OpenVSP to the open source stage.

"If we succeed in building this community, it will bring a lot of visibility to Cal Poly. Over time, we could become the go-to place for OpenVSP, and it could lead to many student projects," he said.

For more information about OpenVSP, go to http://www.openvsp.org. ■

Faculty Notes

Dean's Office

Fred DePiero was invited to present "How Can All This Get Done? Centralizing Efforts Across Programs" at the ABET Symposium 2012 in St. Louis.

Multidisciplinary

Michael Black (Biology), **Alex Dekhtyar** (Computer Science), **Anya Goodman** (Chemistry), and **Chris Kitts** (Biology) received a $200,000, two-year National Science Foundation Transforming Undergraduate Education in Science (TUES) grant for a project on "Preparing the Next Generation of STEM Professionals: Integrating Computational Thinking into an Applied Molecular Forensic Research Program."

Michael Black (Biology), computer engineering student **Douglas Brandt**, **Chris Lupo** (Computer Science/Computer Engineering), **Alex Dekhtyar** (Computer Science), **Anya Goodman** (Chemistry), and **Chris Kitts** (Biology), along with students **Aldrin Montana** and **Bob Somers** co-authored "Pyroprinting Sensitivity Analysis on the GPU," a poster presented at the IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2012) in Philadelphia.

Michael Black (Biology), **Alex Dekhtyar** (Computer Science), **Anya Goodman** (Chemistry), **Chris Kitts** (Biology), and Cal Poly students **Jan Lorenz Soliman**, **Aldrin Montana**, **Emily Neal**, **Jennifer Vanderkellen**, and **Kevin Webb** co-authored a poster on "Microbial Source Tracking by Molecular Fingerprinting" presented at the ACM Conference on Bioinformatics, Computational Biology and Biomedicine in Orlando.

Roger Burton, **Lizabeth Schlemer** (Industrial Engineering) and **Linda Vanasupa** (Materials Engineering) published "Transformational Innovation: Reflections on How to Foster It in Engineering Education Systems" in the International Journal of Engineering Education (Vol. 28, no. 2, pp. 275-285).

Trevor Cardinal (Biomedical Engineering) and co-principal investigators **Nikki Adams** (Biology), **Matthew Burd** (Animal Science), **Elena Keeling** (Biology), **Lily Laiho** (Biomedical Engineering) and **Kristen Cardinal** (Biomedical Engineering) received an additional three-year, $1.6 million Bridges to Stem Cell Research grant from the California Institute for Regenerative Medicine (CIRM).

Kathy Chen (Materials Engineering), **John Oliver** (Electrical Engineering), **Lizabeth Schlemer** (Industrial Engineering) and students **Erica Kim** and **Sophia Rodriguez Mata** published "Work in Progress: Outreach Assessment: Measuring Engagement: An Integrated Approach for Learning" at the Frontiers In Education Annual meeting in Seattle. Schlemer, Vanasupa and **Roger Burton** led a workshop at the meeting on "That Einstein Quote: An Invitation to Shared Inquiry and Dialogue on the Causes of Our Current State."

Trevor Harding (Materials Engineering), **Lizabeth Schlemer** (Industrial Engineering) and **Linda Vanasupa** (Materials Engineering) received a $294,000 grant from the National Science Foundation for a project entitled "WIDER: EAGER - Catalyzing Wide-Scale Innovation: Creating the Conditions for Viral Transformation."

Scott Hazelwood (Biomedical Engineering) and **Steve Klisch** (Mechanical Engineering) along with biomedical engineering student **Nathan Balcom** and mechanical engineering students **Britta Berg-Johansen**, **Kristin Dills** and **Jen Van Donk** co-authored "In Vitro Articular Cartilage Growth with Sequential Application of IGF-1 and TGF-β1 Enhances Volumetric Growth and Maintains Compressive Properties" in the Journal of Biomechanical Engineering (Vol. 134, no.3, pp. 031001-1-031001-8, 2012).

David Hey (Kinesiology), **Brian Self** (Mechanical Engineering), **Lynne Slivovsky** (Electrical Engineering/Computer Engineering), **Kevin Taylor** (Kinesiology), and **Jim Widmann** (Mechanical Engineering) presented "Why the Human Connections Formed through Service Learning Matter" at the American Society for

College of Engineering presents awards to faculty and staff

Mechanical Engineering Professor **Russ Westphal** received the two-year, $40,000, Lockheed Martin Endowed Professorship award. Civil and Environmental Engineering Professor **Gregg Fiegel** won the $1,000 Raytheon Excellence in Teaching and Applied Research Award, and **Jim Gearhardt** and **Yvonne Lynch** received this year's Outstanding Staff awards. The presentations were made at the College of Engineering's Fall Conference in early September.

Lockheed Martin Professorship

The Lockheed Martin Professorship recognizes a faculty member who has contributed new knowledge in the field of engineering, partners with industry and involves students with advanced ideas, and enhances teaching by introducing state-of-the-art topics into the classroom.

Russ Westphal
(ME)

Westphal is known for doing flight research in aerodynamics instrumentation while working across department lines. Over the last two years, he has received grants in excess of $300,000 from the U.S. Air Force, Northrop Grumman and NASA for a wing boundary layer measurement system, a revolutionary configuration for energy efficiency, and work on the Cal Poly laminar flow technology program. Westphal received his Ph.D. in mechanical engineering from Stanford University.

Raytheon Excellence in Teaching and Applied Research Award

Fiegel has served for many years as the faculty adviser for the Cal Poly Society of Civil Engineers. He has been honored as the American Society of Civil Engineers (ASCE) Outstanding Faculty Adviser for Region 9 for three consecutive years. Students report that Fiegel is personable; accessible; and knowledgeable, clear and thorough in class.

"Initially, I did not think I would enjoy geotechnical engineering at all, but by the end of the quarter I had completely changed my mind," noted a student. "I've been strongly considering becoming a civil engineering professor, and it's professors like Dr. Fiegel that provide an excellent example of what it means to effectively teach."

Gregg Fiegel
(CE)

Fiegel received his Ph.D. in civil and environmental engineering from UC Davis.

Outstanding Staff Awards

Gearhardt, head technician for the Mechanical Engineering Department, is a hands-on expert in machining, electronic design, programming, CAD/CAM, equipment purchasing, safety and mechanical design analysis. According to Department Chair Andrew Davol, Gearhardt is an "invaluable asset" who provides service to faculty, staff and students.

"Jim doesn't seem to know the phrase 'good enough,'" said Davol. "Over the past four years, he took personal time to educate himself on wind power engineering in order to assist in the development of the Cal Poly Wind Power Research Center. What he has achieved is impressive, and his contribution to this new facility is invaluable."

As the administrative support for the Electrical Engineering Department, Lynch interacts with the majority of the 1,000 students in the electrical and computer engineering programs.

Lynch initiated a weekly communication to electrical engineering students and she also organizes the Electrical and Computer Engineering Extravaganza, a special event for alumni, faculty and students. ■

Jim Gearhardt and Yvonne Lynch.

Engineering Education (ASEE) Annual Conference and Exposition in San Antonio, Texas.

Jane Lehr (Ethnic Studies and Women and Gender Studies) and **Zoe Wood** (Computer Science) received a grant from the National Science Foundation for a Collaborative Research Experience for Undergraduates (CREU). Under the direction of Lehr and Wood, computer science student **Vanessa Forney** and graphic communications student **Amanda Erb** will investigate technological solutions to sharing and conveying scientific, historical and cultural data related to water and society in the Mediterranean. Follow the project blog at http://calpoly-creu.blogspot.com/.

Biomedical & General Engineering

Trevor Cardinal and students **Kyle Struthers**, **Thomas Kesler** and **Matthew Yocum** published "Chronic Hind Limb Ischemia Impairs Functional Vasodilation and Vascular Reactivity in Mouse Feed Arteries" in Frontiers in Physiology (2:91, 2011). Cardinal presented "Cell Transplantation & Biotherapeutics: A Course Linking Bio-Therapies with Survival Surgery & Experimental Assessment" at the annual meeting of the American Physiological Society (APS) and published an abstract in the conference proceedings.

Michael Govea, a biomedical engineering student under the direction of Cardinal and **Scott Hazelwood**, presented "Chronic Hind Limb Ischemia Induces Cortical Angiogenesis and Increased Stiffness in the Tibia" at the APS conference.

Civil & Environmental Engineering

Anurag Pande was one of seven invited speakers at the International Association of Traffic and Safety Sciences (IATSS) 2012 International Workshop held in Tokyo, Japan. His address was on "Traffic Safety Policies: An International Comparison of Policy Changes."

Ashraf Rahim developed "Guidelines for the Stabilization of Subgrade Soils in California" in collaboration with researchers from CSU Long Beach and UC Davis. Caltrans has formally adopted the guidelines.

Davol honored as Cal Poly's outstanding Faculty Adviser

Andrew Davol, chair of the Mechanical Engineering Department, received Cal Poly's Outstanding Faculty Adviser Award. In presenting the award, President **Jeffrey D. Armstrong** cited Davol's significant commitment to student success. In particular, several students noted that Davol's strong belief in a Cal Poly education gave them extra confidence when searching for a career. ■

Andrew Davol
(ME)

Computer Science & Software Engineering

Alex Dekhtyar gave an invited talk on "Harnessing the Power of Online Complaints" at UC Merced's Department of Computer Science. He also welcomed the freshmen in the Applied Mathematics and Cybernetics program at his undergraduate alma mater, Tver State University, Russia, where he gave a talk on the emerging trend towards interdisciplinary research in the field of computing.

Dekhtyar co-authored two papers: "Process Improvement for Traceability: A Study of Human Fallibility" presented at the 20th IEEE International Requirements Engineering Conference in Chicago; and "Outage Detection via Real-Time Social stream Analysis: Leveraging the Power of Online Complaints" presented at the International Conference on World Wide Web (WWW2012) in Lyon, France.

With multiple co-authors, Dekhtyar gave a software demonstration on TraceLab, an experimental workbench for equipping researchers to innovate, synthesize and comparatively evaluate traceability solutions at the International Conference on Software Engineering in Zurich.

David Janzen presented "On Teaching Arrays with Test-Driven Learning in WebIDE" at the 17th Annual Conference on Innovation and Technology in Computer Science Education in Haifa, Israel. The paper was co-authored by computer science graduate student **Michael Hilton**.

Janzen and **Andrew Hughes** (M.S., Electrical Engineering, 2011) founded Steadfast Innovation, LLC, an applications development company that won an Honorable Mention in the Samsung Note S Pen App Challenge for "Papyrus," an Android table app. (See http://projectpapyrus.com/ for more information.)

Janzen received a $15,000 grant from Google to present a Computer Science for High School (CS4HS) workshop at Cal Poly. Twenty-five high school computing educators from the Central Coast and Central Valley participated.

Janzen created an online introductory Java and Android programming course through Udemy.com containing 100 lectures and more than eight hours of content. The course is located at http://www.udemy.com/java-essentials-for-android/.

Foaad Khosmood co-directed the Global Game Jam 2012, a 48-hour event with more than 10,000 participants from 47 different countries. The event was recognized as the largest game jam in the world by the Guinness Book of World Records. See http://globalgamejam.org/news/2012/03/01/global-game-jam-sets-guinness-world-record%E2%84%A2-being-largest-game-jam-world.

Chris Lupo was invited to speak on "Cross Teaching Parallelism and Ray Tracing: A Project-based Approach to Teaching Applied Parallel Computing" at the GPU Technology Conference in San Jose.

Electrical Engineering

Dean Arakaki co-authored "Design and Assembly of an Antenna Demonstration System" published in IEEE Antennas and Propagation Magazine (Vol. 54, Issue 2, pp. 209-219, April 2012: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6230756).

Arakaki and **Jay Singh** (Industrial Technology) received a $112,000 grant from the Federal Aviation Administration (FAA) for a project on "Air Distribution Environmental Condition Mapping, RFID Hazard Assessment, & Lithium Battery Packaging Performance." He also carried out testing in Cal Poly's Antenna Anechoic Chamber on a circularly-polarized antenna under a contract with Cubic Defense Applications. Another Anechoic Antenna Chamber project overseen by Arakaki was isolation testing of Cal Poly's Picosatellite Orbital Deployer (P-POD). See http://www.ee.calpoly.edu/news/cubesat-p-pod-isolation-testing/.

Dale Dolan received a $15,000 grant for the "Electric Vehicle Evaluation and Education Project (EVEEP)." He completed work on several funded projects, including "Hybrid Solar Photovoltaic Panel for Pool Heating" (sponsored by the University of California, Lawrence Berkeley National Laboratory), "Cal Poly Sustainable Energy Lab" (funded by a Chevron Lab Development Grant), "Load Transient Response Project (sponsored by Western Digital), and "Hybrid Electric Vehicle Grid Connectivity – Phase I" (sponsored by C3RP).

Dolan received the Electrical Engineering Department Solar Award and served as the chair of the IEEE Power and Energy Society Central Coast Chapter, which was named an IEEE High Performing Chapter. He chaired the Cal Poly Power and Energy Conference featuring distinguished keynote speaker Ed Schweitzer from Schweitzer Engineering Laboratories Inc.

Dolan also served as faculty adviser to Cal Poly IEEE, which received the Outstanding Student Branch Award for the western U.S. region.

Dale Dolan and **Taufik** co-authored numerous papers, including the following:

- At the Conference on Information Technology and Electrical Engineering (CITEE) in Yogyakarta, Indonesia, they published "Design and Simulation of Multiple-Input Single-Output DC-DC Converter" (with Owen Jong from the Linear Technology Corporation), "Harmonics and Dynamic Response of a Virtual Air Gap Variable Reactor," and "Piezoelectric Converter for Wind Energy Harvesting" (with Jameson Thornton of PG&E).
- At the North American Power Symposium held at the University of Illinois at Urbana-Champaign, Dolan, Taufik and additional co-authors published "A Robust PWM Inverter for DC Power Supply," "Development of an Open-Source

High-Performance Battery Management System," "A Low Cost Portable Parabolic Solar Concentrator for Combined Heat and Power," and "Solar Trainer for Photovoltaic Systems Education."

• "Geographic Variation in Environmental Benefits Achieved by Plugin Electric Vehicles and Electric Vehicles" was published at the 26th International Electric Vehicle Symposium in Los Angeles.

• "Use of Online Review to Increase Student Performance on Online and In-Class Evaluations in Power Electronics" was published at the ASEE Pacific Southwest Conference held at Cal Poly.

■ ■ ■

Xiomin Jin presented "Transmission Efficiency Study of GaN LED Using RCWA" (co-authored with colleagues from China) at the International Conference on Engineering and Applied Science (ICEAS 2012) in Beijing, China. She and co-authors also published "Optical-Mode Study of Galium Nitrate Based Laser Diodes" at the 2012 International Conference on Electronics and Optoelectronics (ICEOE2012) in Shenyang, China.

Jin and students **Douglas Cattarusa** and **Michael Marshall** also published "Study of Top Triangular Nano-grating on Solar Cell Using Rigorous Coupled Wave Analysis" at ICEOE2012.

■ ■ ■

Bryan Mealy co-authored "Free Range VHDL: The No-Frills Guide to Writing Powerful Code for Your Digital Implementations," a free, Creative Commons-licensed VHDL textbook released by Free Range Factory. He also co-authored "Digital McLogic Design," another Free Range release that presents introductory digital logic design concepts and introductory VHDL modeling concepts. See http://www.freerangefactory.org/site/pmwiki.php/Main/Books

■ ■ ■

John Saghri presented "Characterization and Identification of Smoke Plume for Early Forest Fire Detection" at SPIE Optics and Photonics Conference on Applications of Digital Image Processing (Proceedings, Vol. 8499, no. 54) in San Diego. The paper was coauthored by Raytheon Visiting Scholar **John Jacobs** and Cal Poly electrical engineering graduate students **Daniel Kohler, Tim Davenport** and **Georges Moussa**.

CENG professor honored for enhancing industry collaboration

Mohammad Noori
(CE)

Mechanical Engineering Professor **Mohammad Noori** received the Isadore T. Davis Award for Excellence in Collaboration of Engineering Education and Industry from the American Society for Engineering Education (ASEE). The award presentation was made at the 2012 ASEE Annual Conference and Exposition on June 13.

"Dr. Noori has been a leader in promoting partnerships with industry to improve learning, scholarship and engagement practices within the engineering education community," said **Debra Larson**, dean of the College of Engineering.

"Cal Poly's excellent record of collaboration with industry is one reason we consistently rank as one of the nation's top engineering colleges." ■

■ ■ ■

Taufik gave an invited presentation on "DC House Project for Sustainable Rural Electrification" at the International Conference on Renewable Energy in Jakarta, Indonesia. He also published the following papers:

• "Multiple-Input Single-Output Converter for Renewable Energy Sources" (co-authored with M. Taufik of the Universitas Padjadjaran in Indonesia and T. Wong with the Linear Technology Corporation) published at the IEEE Symposium on Industrial Electronics & Applications held in Bandung, Indonesia.

• "DC House Project for Sustainable Rural Electrification" published in the Proceedings of the ETBKE Conference and Exhibition.

• "The DC House Project: Promoting the Use of Renewable Energy for Rural Electrification" (with M. Taufik) published at the International Conference on Power Engineering and Renewable Energy in Bali, Indonesia.

• "Small-Scale Wind Energy Harvesting Using Piezoelectric Converter" (with Jameson Thorton of PG&E and M. Taufik) published at the International Conference on Power Engineering and Renewable Energy.

• "The DC House Project: Promoting Sustainable Innovations in Renewable Energy Technology" published at the International Conference on Sustainable Innovation in Yogyakarta, Indonesia.

■ ■ ■

Xiao-Hua (Helen) Yu served on the program committee of the International Joint Conference on Neural Networks in Brisbane, Australia, where she presented the paper "Traffic Signal Optimization Using Ant Colony Algorithm" co-authored with **David Renfrew** (M.S., Electrical Engineering, 2009). At the IEEE International Conference on Computational Intelligence for Measurement Systems and Applications in Tianjin, China, Yu chaired a session and presented "Structural Damage Detection Using Artificial Neural Networks and Wavelet Transform" co-authored with electrical engineering graduate student **Arthur Shi**.

Industrial & Manufacturing Engineering

Jianbiao (John) Pan published "Reliability Analysis of Low-Ag BGA Solder Joints Using Four Failure Criteria" co-authored with **Erin Kimura** (M.S., Industrial Engineering, 2012) in the Proceedings of 45th International Symposium on Microelectronics held in San Diego. He and Kimura gave a presentation on the same topic at a meeting of the American Society for Quality (ASQ) Silicon Valley Chapter.

Pan has been appointed editor in chief of the Journal of Microelectronics and Electronic Packaging.

Materials Engineering

Kathy Chen directed a nationwide public outreach program, NanoDays, held at the San Luis Obispo Children's Museum and Judkins Middle School. Chen received a grant from RISEnet (Raising Interest in Science and Engineering Network) to participate in a workshop at the California Science Center in Los Angeles on "Engaging Girls in STEM."

■ ■ ■

Linda Vanasupa and co-authors published "Challenges in Transdisciplinary, Integrated Projects: Reflections on the Case of Faculty Members' Failure to Collaborate" in Innovative Higher Education (Vol. 37, no. 3, pp. 171-184).

Mechanical Engineering

Andrew Kean, Brian Self and undergraduate **Matthew Bissonnette** presented "Physical Experiments to Enhance Model-Eliciting Activity Implementation" at the ASEE Annual Conference and Exposition in San Antonio.

■ ■ ■

Hemanth Porumamilla was invited to take part in the National Academy of Engineering's Frontiers of Engineering Education (FOEE) symposium in Irvine, Calif. The event allows faculty members who are developing and implementing innovative educational approaches in a variety of engineering disciplines to share ideas and learn from research and best practices in education. The attendees were nominated by fellow engineers or deans and chosen from a highly competitive pool of applicants.

■ ■ ■

Brian Self had numerous presentations and papers published, including the following:

• "Reflections on International Exchange of Students and Professors in Mechanical Engineering" (co-authored by Peter Wolfsteiner, a visiting scholar from Munich University of Applied Sciences) presented at the ASEE Annual Conference in San Antonio, Texas.

• "Models and Modeling in Upper Division Classrooms: Impacting Conceptual Understanding and the Professional Skill" (with colleagues from the University of Pittsburgh, U.S. Air Force Academy, the Colorado School of Mines and the University of Minnesota) presented at ASEE Annual Conference.

• "Model Eliciting Activities: Lessons Learned from a Five-Year, Seven Institution Collaboration" (with colleagues from Purdue and Pepperdine Universities) presented at the International Technology, Education and Development Conference in Valencia, Spain.

• "Utilizing the ciHUB to Expand the Use of Concept Inventories: A Case Study Using the Dynamics Concept Inventory" (with T. Reed-Rhoads and P.K. Imbrie from Purdue) presented at the International Technology, Education and Development Conference. ■

CAL POLY
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Alumni in the news

1970s

Noel Lee
(B.S., Engineering Technology, 1971)

Lee honored for innovation with Plus X Lifetime Award

Monster™ founder **Noel Lee** was honored for his innovative vision and career with the prestigious Plus X Lifetime Achievement Award.

http://www.monstercable.com/press/viewpress.asp?Article=316

■■■

Sue Johnson
(B.S., Industrial Engineering, 1977)

Forbes lists Johnson one of 100 powerful women of 2011

Read an interview with **Sue Johnson**, the inspiring leader of Futura Industries who Forbes named one of the 100 most powerful women of 2011.

http://www.standard.net/stories/2012/05/21/futura-leader-inspires-others

1980s

Karen Bartleson
(B.S., Engineering Science, 1980)

Bartleson elected president of IEEE Standards Association

Karen Bartleson is the senior director of community marketing, at Synopsys Inc., with 30 years of experience in semiconductors. She is president-elect of the IEEE Standards Association for the 2013-2014 term.

http://electronicdesign.com/author/36823/KarenBartleson

■■■

Jeannie Bruins
(B.S., Computer Science, 1981)

Bruins running for Los Altos City Council

Jeannie Bruins, a city council candidate spoke to the Los Altos Rotary about her record of service for the city, informed by her work at Hewlett Packard.

http://losaltos.patch.com/articles/los-altos-city-council-candidates-in-their-own-words-jeannie-bruins

■■■

Gary Bloom
(B.S., Computer Science, 1982)

Bloom named CEO of MarkLogic Corporation

MarkLogic Corp., the company powering mission-critical Big Data Applications around the world, announced that **Gary Bloom,** a proven technology executive who was most recently the CEO and president at eMeter, has been named president and chief executive officer. Bloom serves on the President's Cabinet and the board of the Cal Poly Foundation.

http://dvdcreation.digitalmedianet.com/articles/viewarticle.jsp?id=2029191

■■■

Brian Fetz
(B.S., Electronic Engineering, 1986)

Fetz conducts webinars on Agilent's new technology

Brian Fetz, a technical program manager from Agilent, introduced the company's new display technology, DisplayPort, through webinars. Before his current position, Brian worked on Agilent's Bluetooth and Signal Integrity solutions.

http://www.eetimes.com/electrical-engineers/education-training/webinars/4396797/DisplayPort-1-2-Physical-Layer-Testing

■■■

Leonard Morrill
(B.S., Engineering Technology, 1987)

Morrill named field sales manager for Jupiter Systems

Jupiter Systems announced the appointment of **Leonard Morrill** as field sales manager, and one of three senior

College of Engineering Honored Alumna:

Nannette Van Antwerp

The College of Engineering has named **Nannette Van Antwerp** as its 2012 Honored Alumna. Established 30 years ago to provide recognition for outstanding graduates, the Honored Alumna/Alumnus Award is the highest honor bestowed upon Cal Poly alumni by the University's Alumni Association.

From her first patent submitted on her Cal Poly senior project to her most recent encounters with underwater microscopic creatures, Van Antwerp's life has been about discovery.

Van Antwerp (B.S., Mechanical Engineering, 1989) was always interested in the medical side of engineering. "I applied to schools all over the U.S., but fell in love with Cal Poly, especially the camaraderie between students – because we studied together, we developed a team spirit even in lecture classes," she said.

Nannette Van Antwerp (ME, '89) displays some of the 24 patented devices she created to help diabetics.

Cal Poly's co-op program gave Van Antwerp the opportunity to discover her professional path in medical device design and development in the area of insulin pump and glucose sensor systems. She worked for three quarters at MiniMed, a spin-off of Pacesetter, which was later acquired by Medtronic. Not only did the experience give her first-hand industry experience, but the company sponsored her senior project and hired her when she graduated.

During the course of her career, Van Antwerp received 24 patents on products that help diabetics. "I basically worked on steps towards development of an artificial pancreas," explained Van Antwerp. "I still have the picture of a preemie born without a functioning pancreas hooked up to pumps larger than her head. But with the advances we've made, she's doing great, while I've had the privilege of doing good in people's lives."

Now retired, Van Antwerp is still doing good and still discovering. An avid scuba diver, she has become an underwater filmmaker, winning awards, most recently, for "Pacific Drifters" and "Crustaceans of Ambon Bay." "I've fallen in love with diving because I've discovered that these tiny creatures, like pelagic jellyfish, have personalities — each time I'm out is a treasure hunt," said Van Antwerp.

While she is sharing the wonder of the underwater world through her films, Van Antwerp has also provided a generous gift that will aid students and the College of Engineering. She and her husband Bill have made a $4 million bequest to establish an endowed scholarship as well as a general endowment for the College of Engineering.

"Cal Poly does a great job teaching the skills you need to be successful — plus, I have great friends and memories from my time there. I'd love to see other students have that experience, too." ■

managers charged with strengthening the company's engineering and sales operations.

http://eon.businesswire.com/news/eon/20120613005044/en/Jupiter-Systems-Hires-Head-Engineering-Expands-Sales

■ ■ ■

Christopher Pickett
(B.S., Electronic Engineering, 1989)

Pickett named CEO of Pelican Imaging Corporation

Pelican Imaging Corporation, a venture-backed computational imaging business, appointed **Christopher Pickett** president and CEO. He is also the inventor on nine issued U.S. patents.

■ ■ ■

Jay Walter
(B.S., Civil Engineering, 1983)

San Carlos names Walter Public Works Director

Jay Walter was appointed Public Works Director for the City of San Carlos.

http://www.cityofsancarlos.org/civica/press/display.asp?Entry=639

1990s

Michael Agostino
(B.S., Computer Science, 1990)

Agostino named chief technolory officer of 33Across

Social marketing analytics company 33Across has hired **Michael Agostino** as its new chief technology officer.

■ ■ ■

Jim Berney
(M.S., Computer Science, 1994)

Berney oversees Florida studio for Digital Domain

Jim Berney, an Academy Award nominee, who played a leadership role at Sony Pictures Imageworks' New Mexico studio, now oversees the day-to-day operations of Digital Domain Media Group's Florida studio.

■ ■ ■

Engineering Alumn Helping to Map a New Course for the Cal Poly Alumni Association

Having practically grown up on campus, **Tom Lebens** (B.S. Electronic Engineering, 1989) has been connected to Cal Poly for as long as he can remember. His dad, a Cal Poly MBA graduate, served in numerous administrative positions at Cal Poly, including vice president for Administration and Finance.

Lebens, a partner in the intellectual property law firm of Fitch Even Tabin & Flannery, is the new president of the Cal Poly Alumni Association (CPAA). He embraces the Cal Poly he has known all his life but he's also aware that it's a new era:

"The university's new president, new provost, new vice president for Advancement, and three new deans will define how Cal Poly meets the challenges of higher education today," said Lebens. "The CPAA, meanwhile, is also changing to better support the goals of the university while also providing more alumni services and more ways in which they can connect.

"In 2011, the association redefined what it means to be a CPAA member. By dropping the dues requirement, we've gone from 14,000 members to 150,000. We also want to develop diverse and meaningful opportunities for alumni to become engaged, to network with fellow alumni, serve as speakers and mentors, and help develop pipelines to industry.

Tom Lebens
(EE)

"As a San Luis Obispo resident and former chair of the Chamber of Commerce, I'm especially excited by new community outreach in the area of entrepreneurism, such as Innovation Quest, the Center for Innovations and Entrepreneurship, the Small Business Development Center and the SLO HotHouse Summer Accelerator that helps students launch innovation-driven companies.

"In short, it's an exciting time to be a Cal Poly alum – and we hope to hear from as many alumni as possible about how they'd like to connect with their alma mater."

To learn more about the Cal Poly Alumni Association, see www.alumni.calpoly.edu or contact 805-756-2586, 1-888-225-7659. ■

Michael Joseph
(B.S., Electrical Engineering, 1998)

Joseph joins marketing team for Consultwebs.com

Consultwebs.com, Inc., added internet marketing specialist **Michael Joseph** to its law firm Web marketing team.

http://technews.tmcnet.com/news/2012/08/25/6534469.htm

■ ■ ■

Aurora Lipper
(B.S., Mechanical Engineering, 1996; M.S., Mechanical Engineering, 1997)

Lipper making early science education cool

Aurora Lipper, owner of Supercharged Science, was teaching mechanical engineering at Cal Poly in the late 1990s when she realized that the way to hook students on science was to do it early and make it cool.

http://www.sanluisobispo.com/2012/08/27/2201410/supercharged-science-curriculum.html

■ ■ ■

Patricia Murray
(B.S., Aerospace Engineering, 1994)

Murray one of first U.S. pilots to fly into Iran since 1979

While based in Qatar and flying missions in Iraq in December 2003, Lt. Col. Patricia Murray was tagged as one of the first U.S. military pilots to go into Iran since the fall of the Shah in 1979.

http://www.theacorn.com/news/2012-05-24/Community/From_beauty_queen_to_military_pilot.html

■ ■ ■

Andre Soukasian
(B.S., Electrical Engineering, 1994)

Soukasian joins staff of House of Batteries

House of Batteries announced the addition of electrical engineer **Andre Soukasian** to its staff.

http://www.24-7pressrelease.com/press-release-rss/house-of-batteries-welcomes-electrical-engineer-andre-soukasian-284512.php

■ ■ ■

Joe Seebach
(B.S. Computer Science, 1997)

Cracking San Luis Obispo County's tech code

When **Joe Seebach** and Tom Begehr re-connected in early 2010 to launch tech start-up Tegotech, a San Luis Obispo company that develops software technology to help publishers

http://www.sanluisobispo.com/2012/04/06/2020555/cracking-county-s-tech-code.html#storylink=misearch#storylink=cpy

■ ■ ■

Jana Spruce
(B.S., Aerospace Engineering, 1995)

Spruce honored for work in biofuels industry

Greentech Media recently awarded **Jana Spruce** honorable mention among its list of women innovators making their mark in the biofuels industry. Spruce is vice president of marketing and a product development specialist at SG Biofuels.

http://www.greentechmedia.com/articles/read/Guest-Post-Top-10-Women-of-Biofuels/

2000s

Megan Adams
(B.S., Mechanical Engineering, 2012)

Adams joins Eaton Corp. as project engineer

Megan Adams, recipient of the 2012

Emerging Collegiate Leader award from the Sonora region of the Society of Women Engineers (SWE), is now working as a project engineer at the Eaton Corporation. Still actively involved in SWE, she was named coordinator for national 2013 Collegiate Leadership Forum to be held in August next year.

■ ■ ■

Matthew Bush
(B.S., Mechanical Engineering, 2008)

Bush works on Mars rover design with Helical

Shortly after joining Helical, Cal Poly graduate and mechanical engineer **Matthew Bush** began his design work for the Mars rover in early 2008.

http://santamariatimes.com/news/local/from-santa-maria-to-space/article_80235660-dd35-11e1-abf8-001a4bcf887a.html

■ ■ ■

Adam Lunzer
(B.S., Civil Engineering, 2007)

Lunzer honored for work on urban land development

Adam Lunzer, an engineer at Irvine-based RBF Consulting, received the Urban Land Institute (ULI) 2012 Emergent Leadership Award in the engineering category for his work in urban land development projects.

http://eon.businesswire.com/news/eon/20120328006622/en/RBF/Baker/ULI

U.S. Army - 411th Engineer Brigade Commander, Brigadier General David L. Weeks, presenting The Bronze Star to First Lieutenant Russell Fenton on Sept.6, 2012 in Bagram Airfield, Afghanistan.

Russell Fenton Receives Bronze Star

Army 1st Lt. **Russell Fenton** (B.S., Civil Engineering, 2008) put his Cal Poly civil engineering degree to work on behalf of the United States Army and was awarded the Bronze Star in Afghanistan for his service overseeing construction of combat bases while deployed in support of Operation Enduring Freedom.

The project was the single largest construction effort in theater and in Regional Command East history, according to a news release from the Army. He oversaw four construction companies, two Navy construction teams and one Air Force squadron during Operation Devil Hammer. The operation consisted of the construction and expansion of eight combat bases in the winter to support the 1st Brigade Combat Team, 82nd Airborne Division deployment to Afghanistan.

Fenton, a registered civil engineer, is in the Army's 578th Engineer Battalion, Joint Task Force Empire. He received the medal Sept. 6 for serving as the task force construction section officer in charge. ■

Charles Sacavage
(M.S., Civil and Environmental Engineering, 2007)

Sacavage promoted to major in Pennsylvania Air National Guard

During ceremonies July 16 at Fort Indiantown Gap, Captain **Charles L. Sacavage** was promoted to major in the Pennsylvania Air National Guard.

http://newsitem.com/news/promoted-to-major-in-air-national-guard-1.1346610?localLinksEnabled=false

■ ■ ■

Adam Wegener
(B.S., Manufacturing Engineering, 2009)

Wegener takes unique Trash Amps to market

Adam Wegener started working on Trash Amps — a line of iPod speakers and guitar amplifiers made with upcycled soda and beer cans — while an undergraduate in manufacturing engineering. Since 2008, he's taken the concept from prototype to market, producing 1,500 units so far.

http://blog.gopayment.com/stories/yes-we-can-trash-amps-turns-soda-and-beer-cans-into-speakers/ ■

CAL POLY

SAN LUIS OBISPO

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Parents please note: If your son or daughter is no longer at this address, please report his or her current address to the College of Engineering

MAKE A DIFFERENCE...

BUILD A LEGACY

Kenny Hom (B.S., Computer Science, 1995), above right, was motivated to include Cal Poly in his will because "Cal Poly had a major impact on making me who I am; my time there taught me that if I worked hard, I could make a difference in the world." Kenny also sees the value in funding the education of future generations by establishing a legacy. "Generations to come will be tasked with solving global problems and their education will shape our world."

Please contact Director of Development Richard LeRoy at rleroy@calpoly.edu or (805) 756-7108

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